

**AN INTERESTING NEW SPECIES OF *PERSEA* MILLER (LAURACEAE)
FROM THE KADOORIE BOTANIC GARDENS, NEW TERRITORIES, HONG
KONG***

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ABSTRACT

A new species, *Persea kadooriei* Kostermans from Hong Kong, is described.

UITTREKSEL

'N INTERESSANTE NUWE *PERSEA* MILLER (LAURACEAE) SOORT VANAF
DIE KADOORIE- BOTANIESE TUINE, NEW TERRITORIES, HONG KONG

'n Nuwe soort, *Persea kadooriei* Kostermans vanaf Hong Kong, word beskryf.

INTRODUCTION

In March, 1972, Mrs. G. Barretto had for some months been employed in the Kadoorie Botanic Gardens, Hong Kong. Although not a botanist by profession, she is a plant lover and gardener. At that time Dr. S. Y. Hu of the Arnold Arboretum, U.S.A., was gathering material for a revised *Flora of Hong Kong*, and Mrs. Barretto, with many others, assisted her in obtaining the necessary material. It happened that in that spring of 1972, almost every tree of *Persea* in the Kadoorie Gardens (60-80 trees) was in flower. Material was collected and presented to Dr. Hu.

On 26 August, 1972, Dr. Hu wrote that she thought there were two new varieties and one new species of *Machilus* (= *Persea*) represented in the material. She wrote that the new species might be *Machilus levinei* (= *Persea levinei* (Merr.) Kosterm.), but she later reconsidered this and thought that the species was undescribed.

Mrs. Barretto continued to observe the *Persea* trees in the Gardens, especially those assumed to represent an undescribed species. These trees flowered again in 1977, a span of five years from the last time. Apart from collecting essential parts, she also had colour photographs taken of the trees, the flowers,

*The Editor-in-Chief acknowledges with gratitude the assistance of Mr Horace Kadoorie who has borne the cost of the publication of this paper. Mr Kadoorie has for many years been a patron to young scientists and he has long had links with the National Botanic Gardens of South Africa at Kirstenbosch.

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and the fruit, and noted down essential characters. The trees did not flower in 1978, or in 1979, or 1980; they are likely to flower every five years only.

In April, 1978, Dr. Hu revisited Hong Kong; she suggested to Mrs. Barretto that the matter should be referred to me.

All available material was then sent to me in Peradeniya in Sri Lanka.

Rarely has a species been provided with so much documentary information. Mrs. Barretto was assisted by Mark Williams who collected, recorded and photographed specimens and sketched flower details. The drawings were prepared by Teresa Tung and Pauline Lai. Y. W. Tang also supplied photographs.

As I had no herbarium material for comparison at my disposal in Peradeniya, I requested Dr. J. F. Veldkamp of the Rijksherbarium, Leiden, Netherlands, to compare the materials of the new *Persea* with *Persea fructifera* Kosterm. (= *Machilus edulis* King ex Hooker f.) and *P. robusta* (W.W.Sm.) Kosterm. (= *Machilus robusta* W.W.Sm.), to which it seemed allied, and Mrs. Barretto to provide me with a description of *Persea liangkhwangensis* (Chun) Kosterm. (= *Machilus liangkhwangensis* Chun), another relative.

For their co-operation, I express my sincere thanks.

***Persea kadooriei* Kosterm., sp. nov. (Figs 1–12)**

Arbor mediocris, ramulis crassis, innovationibus multi-perulatis, longe conicus, partibus medianus dense minute sericeis, apicalibus glabris, apice minutissime dense sericeis exceptis, foliis chartaceis vel subcoriaceis glabris oblanceolatis usque ad subobovato-oblongis, apice breve late acuminatis, basin versus sensim attenuatis, supra perdense et laeviter areolatis, nervo mediano impressis, lateraliter areolis quadrangularis munitis, nervis lateralibus vix prominulis, subtus perdense minute reticulatis, glaucis, nervo mediano valde prominentibus, nervis lateralibus 18–23 paribus tenuibus prominentibus erecto-patentibus vel subpatentibus marginem versus arcuatis, nervis secundariis obscuris parallelis, petiolis sat gracilibus longis supra concavis; paniculis pseudo terminalibus aggregatis glabris foliis multo minoribus sat paucifloris, pedunculis communis crassis albis (in vivo), ramulis paucis brevibus; pedicellis longis sat tenuibus, apicem versus incrassatis; tubus calycinus nullis, hypanthium intus minutissime pubescentibus; tepalis oblongis vel subobovato-oblongis, tribus exterioribus glabris, fimbriatis; tribus interioribus utrinque sparse minutissime sericeis; filamentis longis, basis versus sub-incrassatis, pilosis; glandulis sat magnis longe stipitatis; staminodiis longe stipitatis, anguste subcordatis acutis, ovario glabro, cylindrico; stylo filamentis aequilongis, stigmate obscuris lateralibus; fructus depresso-subglobosis nigris (in vivo), tepalibus non incrassatis adpressis.

Typus: Hong Kong, New Territories, *G. Barretto s.n.* (L); *G. Barretto s.n.* (HK Herbm., isotypus).



FIG. 1.

Persea kadooriei. A. The habit sketch of a flowering branch, showing the aggregate peduncles, the prominent lower and upper bud-scales, the flower buds, and some flowers; also shown is a leaf, with detail of venation. B. A flower, showing the sepals, the stamens, the latrorse and introrse anthers, and the glands.

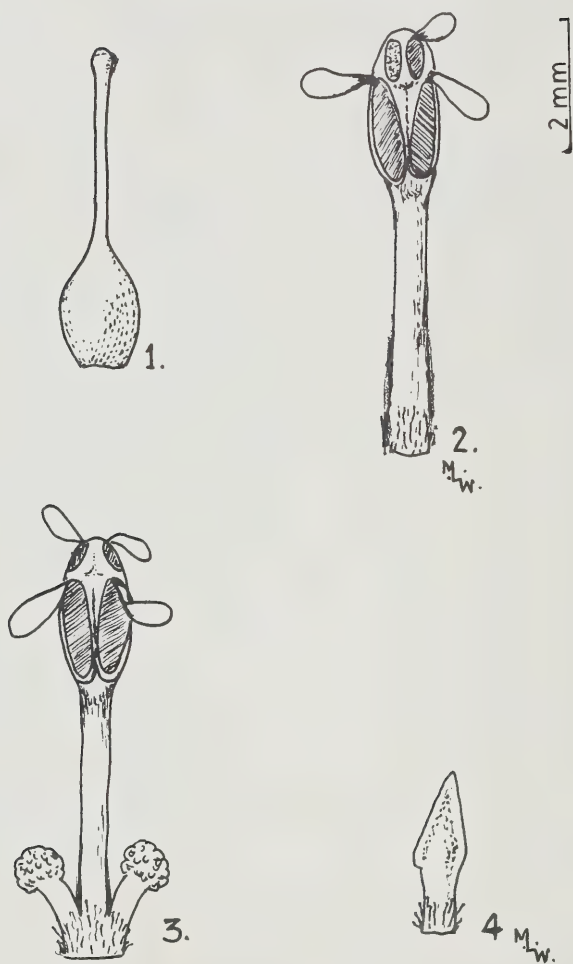


FIG. 2.

Persea kadooriei. Detail:—1. Flask-shaped ovary and the style. 2. A stamen, the valvate anthers introse, the base short pilose. 3. A stamen, the valvate anthers latrorse, the glands and slightly pilose base. 4. A staminode, the base hairy on inner side.



PAULINE LAI

FIG. 3.
Persea kadooriei. A fruit-bearing branch, showing the globose fruit, with the persistent tepals adpressed to the base.



FIG. 4.

Persea kadooriei in full bloom, the flowers overall creamy white, March, 1977. (Tree K.5/1).



FIG. 5.

Leafy branch bearing a terminal cluster of flower buds.



FIG. 6.

A cluster of flower buds, showing the prominent upper sheathing bracts.



FIG. 7.

Close-up of a panicle of buds and opening flowers showing the glabrous branches extending from the stout peduncle, and the short flower-bearing ones.



FIG. 8.

A young leafy shoot showing the lower and upper forms of imbricate scales.



FIG. 9.

A vigorous leafy shoot, showing the young leaves, red-brown, and very tender. Note the large protective imbricating scales, broad ones at the base, the long ones above. (Tree K.5/3).



FIG. 10.

The trunk of *Persea kadooriei*. Note the bark in shades of pale to medium brown, and the raised pieces of corky lenticels. (Tree K.5/1).



FIG. 11.

Close-up of Fig. 10, showing the corky lenticels and the small sections of bark that fall away in bits.



FIG. 12.

A branch bearing semi-ripe and ripe globose fruit.

Tree, up to 10 m tall, bole 406 mm diameter at c. 1 m height. *Bark* rather smooth, brownish, peeling off in small pieces, with corky lenticels, which are also present on the larger, horizontal branches and on smaller branches. *Crown* rounded. Ultimate flower-bearing branchlets thick, with large, round leaf scars. The flush protected by numerous large protective scales (reduced leaves), forming in spring a slender cone of scales, up to 90 mm long, and 15 mm diameter at the rounded base, the lowest ones thick (with thin marginal part) sub-orbicular, up to 8 mm wide and 5 mm high, apiculate; the ones developing in spring from orbicular (lower) ones, c. 10×15 mm, densely minutely sericeous and fimbriate to the apical, obovate-oblong, 20×35 mm long ones, which are only sericeous at the apical part, these are also much thinner. *Mature leaves* glabrous, chartaceous to sub-chartaceous, oblanceolate to subobovate-oblong, 100×240 mm— 110×330 mm (mostly 80×270 mm), shortly acuminate (acumen broad, 10–20 mm long) gradually tapered towards the base; above densely, very minutely, smoothly areolate, glossy, along the midrib (and faintly along the ribs) with deep sub-quadrangular pittings, midrib slightly impressed, yellowish (fresh) like the slender, hardly-raised lateral nerves; below pale green to glaucous (fresh), densely, very minutely reticulate; midrib stout, strongly prominent, lateral nerves slender, prominent, erect-patent to more patent, 18–23 pairs, towards the

margin arcuate and slightly ascendent; in between a short accessory lateral nerve (some lateral nerves are forked); secondary nerves thin, perpendicular to the lateral nerves, a number perpendicular to the midrib. *Petiole* relatively thick, 15–25 mm long, concave or flattish above. *Leaves* aggregate; young leaves reddish-brown with a tuft of hairs apically.

Panicles aggregate, glabrous, pseudo-terminal, initially covered by large, rather fleshy, sub-quadrangular, 15×15 mm (lower ones) to obovate-elliptic, 5×25 mm (upper ones) bud-scales, densely, very minutely sericeous outside. *Main peduncles* stout, white (fresh), up to 80 mm long, bearing well-spaced, rather few, up to 15 mm long branches, which in turn bear very short branches with 1–3 flowers. *Flowers* 11–12 mm (occasionally 14 mm) diameter, scented, the back creamy-green, the front ivory-white. *Bracts* long, slender, 10 mm (lower) to 3 mm (upper ones). *Pedicels* 10 mm long, thickish (after drying, thin), the apical part under the hypanthium elongate cup-like, glabrous, distinct, filled with loose parenchymatous tissue. *Calyx tube* none. *Hypanthium* inside slightly white-pubescent. *Tepals* oblong to subobovate-oblong (becoming very narrow after drying) 5–6.5 mm long, 2–3 mm wide; outer three glabrous, fimbriate; inner three somewhat sericeous both sides and fimbriate. *Filaments* 4 mm long, rather thickish (thin after drying), towards their base slightly thickened and with a few short thin hairs; anthers oval, 1–1.5 mm long, of the inner three erect, stamens latrorse; of the outer series erect-patent stamens, introrse. *Staminodes* 2 mm long, the filament slightly more than 1 mm, the base hairy on inner side, glabrous on outside, the head narrowly triangular, acute. *Glands* ellipsoid, rather large, on slightly pilose, 1 mm long stipes. *Ovary* glabrous, flask-shaped. Style 2.5 mm long; stigma inconspicuous, lateral. *Fruit* globose or depressed-globose, up to 25–30 mm diameter, at maturity black with dark bluish bloom; the not enlarged tepals horizontal, adpressed to the base of the fruit.

Distribution: Hong Kong, New Territories, alt. c. 500 m.

MATERIALS EXAMINED

HONG KONG, New Territories: growing in nature within Kadoorie Botanic Gardens, alt. c. 500 m. north-facing rocky mountainside. Trees K.5, K.5(1), and K.5(3), March: flowering, and July: fruit. *Mrs G. Barretto s.n.* (L); same K.5 tree, fl. *S.Y. Hu 11510* (A).

NOTES

The species is related to *Persea fructifera* Kosterm. and *P. robusta* (W.W.Sm.) Kosterm., but differs by the venation, leaf and flower size, indumentum, and the much smaller fruit.

This handsome new *Persea* species is named in honour of Mr Horace Kadoorie.

The Kadoorie family is known for philanthropy and benevolence in the spheres of education, agriculture, and social welfare in Hong Kong and other parts of the world.